

IN THE CLAIMS

Pursuant to 37 CFR §1.121(c), the claim listing, including the text of the claims, will serve to replace all prior versions of the claims, in the application.

Claims 1-53 (Canceled)

1 54. (Previously Presented) A gas system for testing aircrew systems including a first
2 system and a second system, said gas system characterized by:

3 a first compressor compressing air, said first compressor coupled to each of the first system
4 and the second system, said first compressor characterized by at least one blower, a speed of said
5 blower depending on a voltage applied to said blower;

6 a second compressor compressing the air, said second compressor coupled to the second
7 system, said second compressor producing a lower flow at a higher pressure than said first
8 compressor;

9 a first flow sensor detecting a flow of the air compressed by said first compressor and leakage
10 of the aircrew systems;

11 a second flow sensor detecting the flow of the air compressed by said first compressor and
12 the leakage of the aircrew systems;

13 a first flow valve mounted to control the flow of the air compressed by said first compressor
14 to said first flow sensor;

15 a second flow valve mounted for controlling the flow of the air compressed by said first
16 compressor to said second flow sensor;

17 a regulator regulating a pressure of said second system;

18 a regulator enable valve coupled to the regulator, the regulator enable valve controlling
19 pressure of air flowing through the regulator;

20 a first pressure sensor detecting a pressure of said first system;

21 a second pressure sensor detecting the pressure of said second system;

22 a first pressure valve controlling the pressure of said first system;

23 a second pressure valve for controlling the pressure of said second system; and

24 a controller regulating operation of said gas system.

1 55. (Previously presented) The gas system of claim 54, said first compressor characterized
2 by three regenerative blowers connected in series, said three regenerative blowers characterized by
3 a first blower, a second blower, and a third blower.

1 56. (Previously Presented) The gas system of claim 54, wherein said second system
2 includes a G-suit, said first compressor compressing the air until pressure of the G-suit reaches a
3 predetermined first pressure, said second compressor starting to compress the air when said pressure
4 of the G-suit reaches said predetermined first pressure and finishing when said pressure of the G-suit
5 reaches a predetermined second pressure.

1 57. (Previously presented) The gas system of claim 54, further comprised of:
2 said first flow sensor being able to measure the flow from 0 to 10,000 cubic centimeters per
3 minute; and
4 said second flow sensor being able to measure the flow 0 to 300 cubic centimeters per
5 minute.

1 58. (Previously Presented) The gas system of claim 54, with said controller characterized
2 by a speed control printed circuit board controlling a voltage applied to said first compressor to
3 control the speed of said blower.

1 59. (Previously Presented) An apparatus for testing aircrew systems, said
2 apparatus characterized by:
3 a first unit configured to test a mask;
4 a second unit configured to test a G-suit;
5 a third unit configured to test a communication systems;
6 a common gas system integrated into said first unit and said second unit, said common gas
7 system characterized by a first compressor and a second compressor producing a lower flow and a

8 higher pressure than said first compressor, said first compressor compressing air when a pressure of
9 an item to be tested is below a preset pressure value, and said second compressor compressing the
10 air when the pressure of the item to be tested is equal to or over the preset pressure value; and
11 a control panel coupled to each of the first unit, the second unit, the third unit, and the
12 common gas system, the control panel including a mode select switch for controlling flow of air
13 compressed by the first compressor or the second compressor.

1 60. (Previously presented) The apparatus of claim 59, further characterized by a fourth
2 unit configured to test a goggle.

1 61. (Previously Presented) The apparatus of claim 59, comprised of
2 said common gas system characterized by:
3 at least one blower included in said first compressor, a speed of said blower depending on
4 a voltage applied to said blower;
5 a first flow sensor detecting a flow of compressed air and a leaking of the aircrew systems;
6 a second flow sensor detecting the flow of the compressed air and the leaking of the aircrew
7 systems;
8 a first flow valve controlling the flow of the compressed air to said first flow sensor, the first
9 flow valve turning on or off depending on a mode selected by the mode select switch;
10 a second flow valve controlling the flow of the compressed air to said second flow sensor,
11 the second flow valve turning on or off depending on the mode selected by the mode select switch;
12 a regulator regulating a pressure of the G-suit;
13 a first pressure sensor detecting a pressure of the mask;
14 a second pressure sensor detecting the pressure of the G-suit;
15 a first pressure valve controlling the pressure of the mask;
16 a second pressure valve controlling the pressure of the G-suit; and
17 a controller regulating operation of said gas system.

1 62. (Previously presented) The apparatus of claim 59, said first compressor characterized

2 by three regenerative blowers connected in series, said three regenerative blowers characterized by
3 a first blower, a second blower, and a third blower.

1 63. (Previously presented) The apparatus of claim 59, said first compressor compressing
2 the air for testing the mask, said first compressor compressing the air for the G-suit until pressure
3 in the G-suit reaches 55 inch H₂O, said second compressor starting to compress the air for the G-suit
4 when said pressure is about 55 inch H₂O and finishing when said pressure in the G-suit is about 70
5 inch H₂O.

1 64. (Previously presented) The apparatus of claim 59, further characterized by:
2 a first limit valve limiting a pressure of said first system.

Claims 65-70. (Canceled)

1 71. (Previously Presented) The gas system of claim 54, further comprising:
2 a first digital indicator reading out data outputted from said first and second flow sensors;
3 a second digital indicator reading out data outputted from said first pressure sensor; and
4 a third digital indicator reading out data outputted from said second pressure sensor.

1 72. (Previously Presented) An apparatus for testing aircrew systems, said apparatus
2 comprising:

3 a first unit for testing a mask;

4 a second unit for testing a G-suit;

5 a gas system coupled to the first unit and the second unit, the gas system comprising:

6 a first compressor for compressing air, the first compressor coupled to the first unit;

7 a second compressor for compressing air, the second compressor coupled to the
8 second unit;

9 a first flow sensor detecting flow of air compressed by the first compressor;

10 a first flow valve coupled to the first flow sensor, the first flow valve controlling flow

11 of air compressed by the first compressor into the first flow sensor;
12 a first pressure sensor detecting pressure of the first unit;
13 a second pressure sensor detecting pressure of the second unit;
14 a regulator regulating pressure of air flowing into the second unit; and
15 a regulator enable valve coupled to the regulator, the regulator enable valve
16 controlling pressure of air flowing through the regulator; and
17 a control panel coupled to each of the first unit, the second unit, and the gas system, the
18 control panel including a mode select switch for controlling flow of air compressed by the first
19 compressor or the second compressor, the mode select switch turning on or off the first flow valve
20 depending on a mode selected by the mode select switch.

1 73. (Previously Presented) The apparatus of claim 72, further comprising:
2 a second flow sensor detecting flow of air compressed by the first compressor; and
3 a second flow valve coupled to the first flow sensor, the second flow valve controlling flow
4 of air compressed by the first compressor into the second flow sensor.

1 74. (Previously Presented) The apparatus of claim 73, further comprising:
2 a first digital indicator reading out data outputted from the first and second flow sensors;
3 a second digital indicator reading out data outputted from the first pressure sensor; and
4 a third digital indicator reading out data outputted from said second pressure sensor.

1 75. (Previously Presented) The apparatus of claim 73, wherein the mode select switch
2 turns on or off the second flow valve depending on a mode selected by the mode select switch.

1 76.(Previously Presented) A method of operating a gas system for testing aircrew systems
2 including a first system and a second system, said method comprising the steps of:
3 selecting one mode among a plurality of modes including a high leak mode, a low leak mode,
4 a G-suit leak mode, and a mask mode;
5 compressing an air with a first compressor;

6 turning on a first flow valve whenever the mode is the mask mode or the high leak mode, the
7 air compressed by the first compressor flowing through the first flow valve;

8 detecting flow of the air flowing through the first valve with a first flow sensor, the air
9 flowing through the first valve flowing into the first system

10 turning on a second flow valve whenever the mode is the low leak mode, the air compressed
11 by the first compressor flowing through the second flow valve;

12 detecting flow of the air flowing through the second flow valve with a second flow sensor,
13 the air flowing through the second valve flowing into the first system;

14 detecting pressure of the air flowing through the first valve or the second valve with a first
15 pressure sensor;

16 compressing the air with a second compressor whenever the mode is the G-suit leak mode,
17 the air compressed by the second compressor flowing into the second system through a regulator;

18 turning on a regulator enable valve to disable the regulator allowing pressure of the second
19 system to rise to a predetermined pressure; and

20 detecting pressure of the air flowing through the regulator with a second pressure sensor.